

Notice of Allowability

Application No.

10/779,962

Examiner

Henry S. Hu

Applicant(s)

ALTES ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of July 27, 2006.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. Applicants' **Amendment** filed on July 27, 2006 was received. Claims 1 and 15 were both amended; Claims 16-21 were all cancelled, while no new claim was added. To be more specific, parent Claims 1 and 15 were both amended to correct improper language as raised in claim objection and also to further clarify claim language on Claim 1. In order to overcome OPD rejection on Claims 16-21 by Claims 1-19 of US Patent No. 6,737,473 to Altes et al. (the parent case 09/905,664 of this Application), **the Applicants have cancelled Claims 16-21.**

Claims 1-15 are now pending with a total of two independent claims (Claim 1 and Claim 15).

An action follows.

2. Claim rejections under ODP and 35 USC 103 in the previous Office Action dated March 28, 2006 are now removed for the reasons given in paragraphs 3-9 thereafter.

Allowable Subject Matter

3. Claims 1-15 are allowed.

4. The following is an examiner's statement of reasons for allowance: The above claims 1-15 are allowed over the closest references:

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5. *The limitation of parent Claim 1 of the present invention relates to a process of preparing a water-continuous emulsion composition that is essentially free of organic solvents and having (a) a solids content of greater than 75%, (b) an average particle size less than 5 μm , and (c) having sufficient stability to produce a stable lower solids emulsion upon dilution with water comprising the steps of:*

(I) forming a premix comprising: (A) 100 parts of an elastomeric polymer having a viscosity of 0.5 to 1,000,000 KPa-s and a glass transition temperature up to 50 °C, (B) 3-30 parts surfactant, wherein the premix is essentially free of organic solvents,

(II) adding (C) 5-45 parts water to the premix with mixing; thereby forming a water-continuous emulsion.

Other parent Claim 15 relates to parent claim 1 but the water is added to the premix in incremental portions, whereby each portion is as specified. See other limitations of dependent Claims 2-14.

6. In view of the Applicants' amendment, each of process parent Claims 1 and 15 of present invention carries the first step of forming a prefix, which is comprising (A) "an elastomeric polymer having a viscosity of 0.5 to 1,000,000 KPa-s and a glass transition temperature up to 50 °C" and (B) a surfactant. The key point is that "the prefix is essentially free of organic solvents", and Applicants has further specified the "essentially free" content of organic solvents on page 17 at lines 13-31. It is noted that parent Claim 1 has been amended to carry all the limitations of the main composition claim allowed in the parent application, now US Patent No. 6,737,473.

7. With respect to 103(a) rejection for Claims 1-4, 9-16 and 20-21, the primary reference **Hiroshi** only discloses a cross-linkable composition, which may carry the claimed transition temperature and the claimed viscosity. However, no mention is found on a solid content up to 90% and a particle size between 0.1 and 5 μm . Other than those, he is also silent about two things including using a pre-mix method (for Claims 1 and 15) and adding water in incremental amount (for Claim 15). As indicated by Applicants, Hiroshi's elastomer is emulsified with some solvent, which may teach away from present application which requires essentially free of organic solvent(s) (see page 6 middle section of Remarks).

8. Secondary reference including **Gee or Nothnagel** may disclose using a pre-mix forming method to prepare emulsion from high viscosity solution. For instance, **Gee** has **first prepared a thick phase emulsion** with the aid of surfactant and small amount water, **and then dilutes it with additional water** in larger amount (the addition of water for such a pre-mix process may be in incremental amount, see working Examples 2-5 on pages 7-8), so as to obtain the desired content (abstract, line 6). **Nothnagel** has prepared aqueous dispersions of amine and ammonia salts of acrylic polymers through **a pre-mix method** (abstract, line 1-5; column 15, line 36-42; column 4, line 64-68; column 5, line 20-25). Some organic solvent(s) are used with water for mixing; and then organic solvent(s) can be removed almost completely by **azeotropic distillation** (column 10, line 25-36). **It is noted that many factors including viscosity, particle size and solid contents in the emulsion may be changed after long heating treatment** so as to remove organic solvent(s). Based on this rational, even the motivation to

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link secondary reference Gee or Nothnagel may be existed, it still cannot (at least not easily) arrive at the present claim (see page 6-7 of Remarks).

9. It is easily found that two tertiary references including **Chung and Joffre** used in 103 rejections for Claims 6-8 and 17-19 as well as Claim 5 cannot fix the deficiency of above references in any combination.

Additionally, the present invention has shown in examples along with some comparative examples for unexpected results in preparing a water-continuous emulsion but solvent-free composition by a premix-dilution method (see pages 25-36 for **examples 1-9** along with its comparative control, and **Tables 1-6**). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

10. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

Dunaway et al. (US 5,744,544) only disclose that a high solids (> 50 wt%) dispersion of polymer particles with lower viscosities can be prepared from polymerizing monomers **in the presence of a latex** (abstract, line 1-4). Although the latex contains a surfactant and some organic solvents, the resultant viscosity is **less than 20,000 cps**, which is equivalent to only 20 Pa.s or 0.02 KPa.s. No premix-dilution is mentioned at all. Therefore, Dunaway does not teach or fairly suggest the limitations of present invention.

11. The key issue in preparing a water-continuous emulsion composition that is essentially free of organic solvents, regarding a combination of (A) forming a prefix, (B) a solids content of greater than 75% and (C) an average particle size less than 5 μm , cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

12. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the independent and parent **Claim 22** is allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending **Claims 23-44** are passed to issue.

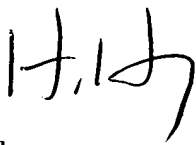
13. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

August 18, 2006



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